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## Notes on the genus *Echthromorpha* HOLMGREN 1868 (Hymenoptera, Ichneumonidae, Pimplinae) in the Malagasy Subregion

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**Abstract:** The genus *Echthromorpha* HOLMGREN 1868 is represented by four species in the Malagasy subregion. The specific status of *Echthromorpha hyalina* (DE SAUSSURE 1890), *Echthromorpha rufa* CAMERON 1907 and *Echthromorpha spinator* (FABRICIUS 1798) is revived. A key to the species is provided.

**Key words:** Ichneumonidae, Pimplinae, *Echthromorpha*, key, taxonomy, new records, Malagasy Subregion.

### Introduction

The genus *Echthromorpha* HOLMGREN 1868, is widely distributed in the Ethiopian, Oriental and Australian Region. In the catalogues of TOWNES & TOWNES (1973) and YU & HORSTMANN (1997) five subspecies of *Echthromorpha agrestoria* (SWEDERUS 1787) are listed from the Malagasy Subregion: *E. hyalina* (DE SAUSSURE 1890) from Madagascar, *E. macula* (BRULLÉ 1846) from Réunion, *E. rufa* CAMERON 1907, from the Inner Seychelles (Republic of Seychelles), *E. rufomaculata* CAMERON 1907, from Coëtivy (Republic of Seychelles) and *E. spinator* (FABRICIUS 1798) from Mauritius. The genus is apparently absent from the large volcanic islands of Comoros (Grande Comore, Anjouan, Mohéli), Mayotte and Rodrigues and all coralline islands except Coëtivy. The species and subspecies of *Echthromorpha* HOLMGREN are mainly based on colour differences. Colour differences are only useful studying fresh material, because museum specimens can lose their colour in the run of time. A modern taxonomic treatment of the genus *Echthromorpha* HOLMGREN exists only for the Australian species (GAULD 1984).

In the Malagasy Subregion species of the families Lasiocampidae, Noctuidae, Pyralidae and Sphingidae (Lepidoptera) are known as hosts.

This paper is based on the material of following collections: Mauritius Sugar Industry Research Institute in Réduit (Mauritius), Museum d'Histoire Naturelle de La Réunion (MHN RUN) in Saint Denis (Réunion), Natural History Museum (BMNH) in London (Great Britain), Collection Nilsson in Uppsala (Sweden) and Naturhistorisches Museum (NHMW) in Wien (Austria).

## Abbreviations

biol. ....	biology
BMNH .....	Natural History Museum London
cat. ....	catalogue
design. ....	designation
distr. ....	distribution
ed. ....	editor
fig. (figs) .....	figure (figures)
MSIRI .....	Mauritius Sugar Industry Research Institute
MHN RUN .....	Museum d'Histoire Naturelle de La Réunion
NHMW .....	Naturhistorisches Museum Wien
pl. ....	plate
syn. ....	synonym
tax. ....	taxonomy
typ. gen. ....	typus generis

## Key to the *Echthromorpha* species of the Malagasy Subregion

- 1 Fore wings with black spot in radial cell ..... 2
- Fore wings without black spot in radial cell ..... 3
- 2 Tergites 2-4 coarsely punctate. Mesopleura densely punctured. Frons and occiput yellow and black ..... *agrestoria rufomaculata* CAMERON
- Tergites 2-4 smooth. Mesopleura above smooth; Frons and occiput red and black ..... *E. spinator* FABRICIUS
- 3 Propodeum completely sculptured; Mesopleura below densely punctured; Frons and occiput yellow and red ..... *E. rufa* CAMERON
- Anterior part median and posterior part of propodeum smooth. Mesopleura below sparsely punctured. Frons and occiput yellow and black ..... *E. hyalina* (DE SAUSSURE)

## Taxonomy and faunistics

### *Echthromorpha agrestoria rufomaculata* CAMERON 1907

*Echthromorpha rufomaculata* n.sp.: CAMERON 1907: 79 (descr. ♂, Seychelles (Coëtivy)).

*Echthromorpha rufomaculata* (CAMERON 1907): MORLEY 1912: 170 (syn. of *Echthromorpha variegata* BRULLÉ 1846).

*Echthromorpha agrestoria rufomaculata* CAMERON 1907: TOWNES & TOWNES 1973: 36 (tax., type design., cat.).

*Echthromorpha agrestoria rufomaculata* CAMERON 1907: YU & HORSTMANN 1997: 826 (cat.).

H o s t : Unknown.

M a t e r i a l e x a m i n e d : Seychelles: Coëtivy: 1 ♂ leg. J.S. Gardiner (Holotype, BMNH).

Endemic. Currently the status of *Echthromorpha rufomaculata* CAMERON remains uncertain. It differs from *Echthromorpha agrestoria occidentalis* KRIEGER 1909 and *Echthromorpha agrestoria mixta* HOLMGREN 1868 from the Ethiopian Region in several characters, but is probably a synonym of *Echthromorpha agrestoria insidiator* (SMITH

1868), which occurs in the Oriental and Australian Region. As only the holotype is known, the occurrence on the small and isolated coralline island of Coëtivy should be confirmed.

### ***Echthromorpha hyalina* (DE SAUSSURE 1890) status revived**

- Stagmopimpla hyalina* n.sp.: DE SAUSSURE 1890: pl. 16 (figs 1, 1a, b, p, ♂, typ. gen.).  
*Echthromorpha hyalina* (DE SAUSSURE 1892): KRIEGER 1899: 53 (tax.).  
*Echthromorpha hyalina* (DE SAUSSURE 1892): SCHULZ 1906: 102 (tax.).  
*Echthromorpha hyalina* (DE SAUSSURE 1892): KRIEGER 1909: 304 (key), 327 (descr. ♂ ♀, Madagascar).  
*Echthromorpha hyalina* (DE SAUSSURE 1892): MORLEY 1913: 39 (key), 48 (tax., Madagascar).  
*Stagmopimpla hyalina* DE SAUSSURE 1892: VIERECK 1914: 136 (cat. typ. gen.).  
*Echthromorpha hyalina* (DE SAUSSURE 1890): SEYRIG 1932: 15 (biol., Madagascar), 87 (tax., biol., Madagascar), pl. 6 (figs. 4-6).  
*Echthromorpha hyalina* (DE SAUSSURE 1890): SEYRIG 1935: 67 (biol., Madagascar).  
*Echthromorpha* (!) *hyalina* (DE SAUSSURE 1892): PAULIAN 1953: 82 (host-parasite cat. Madagascar).  
*Echthromorpha hyalina* (DE SAUSSURE 1892): PAULIAN 1955: 228 (biol., Madagascar).  
*Echthromorpha hyalina* (DE SAUSSURE 1892): PAULIAN & VIETTE 1955: 245 (biol., Madagascar).  
*Echthromorpha hyalina* (DE SAUSSURE 1892): BENOIT 1957: 308 (tax., Réunion).  
*Echthromorpha agrestoria* ssp. *hyalina* (DE SAUSSURE 1892): TOWNES 1958: 42 (tax.).  
*Echthromorpha hyalina* (DE SAUSSURE 1892): BENOIT 1964: 384 (tax., Madagascar).  
*Echthromorpha hyalina* (DE SAUSSURE 1890): BRÉNIÈRE 1965: 347 (host-parasite cat. Madagascar).  
*Echthromorpha hyalina* (DE SAUSSURE 1892): TOWNES 1969: 115 (Madagascar).  
*Echthromorpha agrestoria hyalina* (DE SAUSSURE 1892): TOWNES & TOWNES 1973: 34 (cat.).  
*Echthromorpha agrestoria hyalina* (DE SAUSSURE 1892): MADL 1996: 836 (Madagascar), 837 (cat. Madagascar).  
*Echthromorpha agrestoria hyalina* (DE SAUSSURE 1892): YU & HORSTMANN 1997: 825 (cat.).
- Hosts:** Lasiocampidae: *Borocera cajani* (Vinson 1863) – Noctuidae: *Anomis auragoides* (GUENÉE 1852), *Anomis flava* (FABRICIUS 1775), *Anticarsia rubricans* (BOISDUVAL 1833), *Thysanoplusia orichalcea* (FABRICIUS 1775), *Simplicia pannalis* GUENÉE 1863 – Sphingidae: *Basiothia medea* (FABRICIUS 1781).
- Material examined:** Madagascar: without locality 1 ♀ leg. C. Keller (NHMW) – Prov. Fianarantsoa: Ifanadiana-Fort Carnot, 27 km S Ifanadiana 1 ♀ 27.10.2001 leg. M. Madl (NHMW) – Ranomafana 1 ♂ 24.10.1989 leg. L.A. Nilsson (Plant Reproduction & Ecology Project Uppsala).

**Distribution:** Madagascar: mainland, Nosy Boraha (Sainte Marie).

Endemic to Madagascar. It differs from *Echthromorpha rufa* CAMERON in several characters (see also key), but it resembles *Echthromorpha agrestoria occidentalis* KRIEGER 1909, which has a black spot in the radial cell of the fore wing and the same sculpturation of the propodeum.

### ***Echthromorpha rufa* CAMERON 1907 status revived**

- Echthromorpha rufa* n.sp.: CAMERON 1907: 80 (descr. ♂ ♀, Seychelles (Mahé)).  
*Echthromorpha rufa* CAMERON 1907: MORLEY 1912: 171 (tax., biol., Seychelles (Mahé, Silhouette)).  
*Echthromorpha rufa* CAMERON 1907: MORLEY 1913: 39 (key), 48 (tax.).  
*Echthromorpha rufa* CAMERON 1907: SEYRIG 1932: 89 (tax.).  
*Echthromorpha rufa* CAMERON 1907: SCOTT 1933: 365.

*Echthromorpha agrestoria rufa* CAMERON 1907: TOWNES & TOWNES 1973: 36 (tax., type design., cat.).

*Echthromorpha rufa* CAMERON 1907: GERLACH, MATYOT & SAARISTO 1997: 28 (cat. Seychelles).

*Echthromorpha agrestoria rufa* CAMERON 1907: YU & HORSTMANN 1997: 826 (cat.).

**Host:** Unknown.

**Material examined:** Seychelles: Inner Seychelles: Mahé: Morne Seychellois National Park: Morne Blanc 12♂♂ 27.-28.5.1996 leg. M. Madl (NHMW); 400-667m 5♂♂ 1♀ 27.5.1996 leg. S. Schödl (NHMW) – Mare aux Cochons 1♂ 1♀ 31.10.1998 leg. M. Madl (NHMW) – Casse Dent 5♂♂ 8.6.1999 leg. M. Madl (NHMW) — Silhouette: La Passe 3♂♂ 16.-22.5.2003 leg. M. Madl (NHMW).

**Distribution:** Seychelles: Mahé, Silhouette.

Endemic to Inner Seychelles or Seychelles proper. It is near *Echthromorpha hyalina* (DE SAUSSURE), but differs in characters mentioned in the key.

### ***Echthromorpha spinator* (FABRICIUS 1798) status revived**

*Ichnemon spinator* n.sp.: FABRICIUS 1798: 224 (descr. ♂, Mauritius (not South Africa)).

*Bassus spinator* (FABRICIUS 1798): FABRICIUS 1804: 98 (tax., descr. ♂, Mauritius (not South Africa)).

*Bassus spinator* (FABRICIUS 1798): DE DALLA TORRE 1901: 251 (cat. (Mauritius, not South Africa)).

*Echthromorpha agrestoria spinator* (FABRICIUS 1798): TOWNES & TOWNES 1973: 36 (tax., cat.).

*Echthromorpha agrestoria spinator* (FABRICIUS 1798): YU & HORSTMANN 1997b: 826 (cat.).

*Echthromorpha spinator* (FABRICIUS 1798): ROUSSE & VILLEMANT 2012: 4 (cat. Réunion), 47 (key, tax., Réunion), 49 (fig. 21b).

\**Pimpla macula* n.sp.: BRULLÉ 1846: 89 (descr. ♂ ♀, Réunion).

*Stagmopimpla macula* (BRULLÉ 1846): DE SAUSSURE 1890: pl. 20 (tax., fig. 2, ♀).

*Pimpla macula* (BRULLÉ 1846): TOSQUINET 1896: 308 (tax., descr. ♀, Mauritius).

*Echthromorpha macula* (BRULLÉ 1846): KRIEGER 1899: 53 (tax.).

*Echthromorpha macula* (BRULLÉ 1846): DE DALLA TORRE 1901: 455 (cat.).

*Echthromorpha macula* (DE SAUSSURE 1892) (!): SCHULZ 1906: 104 (tax.).

*Echthromorpha macula* (BRULLÉ 1846): SCHMIEDEKNECHT 1907: 28 (cat. (Mauritius, not Gallia)).

*Echthromorpha macula* (BRULLÉ 1846): KRIEGER 1909: 304 (key), 323 (tax., descr. ♂, Réunion).

*Echthromorpha macula* (BRULLÉ 1846): MORLEY 1913: 38 (key).

*Echthromorpha macula* (BRULLÉ 1846): SEYRIG 1932: 89 (tax.), 176 (Réunion).

*Echthromorpha macula* (BRULLÉ 1846): VINSON 1938: 29 (biol., Mauritius).

*Echthromorpha macula* (BRULLÉ 1846): MOUTIA & MAMET 1947: 29 (biol., Mauritius).

*Echthromorpha macula* (BRULLÉ 1846): BENOIT 1957: 308 (tax., Réunion).

*Echthromorpha agrestoria macula* (BRULLÉ 1846): TOWNES 1958: 42 (tax.).

*Echthromorpha agrestoria macula* (BRULLÉ 1846): TOWNES & TOWNES 1973: 35 (type design., cat.).

*Echthromorpha agrestoria macula* (BRULLÉ 1846): YU & HORSTMANN 1997: 825 (cat.).

*Echthromorpha macula* (BRULLÉ 1846): ROUSSE & VILLEMANT 2012: 47 (syn.).

\**Echthromorpha nigricans* n.sp.: KRIEGER 1909: 304 (key), 326 (descr. ♂, Réunion, not Madagascar), 327 (figs 13a, b).

*Echthromorpha nigricans* KRIEGER 1909: MORLEY 1913: 38 (key), 43 (cat.).

*Echthromorpha nigricans* KRIEGER 1909: SEYRIG 1932: 87 (tax.).

*Echthromorpha nigricans* KRIEGER 1909: TOWNES & TOWNES 1973: 35 (syn. of *Echthromorpha agrestoria macula*).

\**Pimpla vittata* n.sp.: BRULLÉ 1846: 89 (descr. ♂ ♀, Mauritius).

*Stagmopimpla vittata* (BRULLÉ 1846): DE SAUSSURE 1890: pl. 13 (tax., fig. 6, ♀).

*Echthromorpha vittata* (BRULLÉ 1846): DE DALLA TORRE 1901 (456 (tax., cat. (Mauritius, not Gallia).

*Echthromorpha macula* var. *vittata* (BRULLÉ 1846): KRIEGER 1909: 304 (key), 325 (tax., descr. ♂ ♀, Mauritius).

*Echthromorpha macula* var. *vittata* (BRULLÉ 1846): MORLEY 1913: 43 (tax., Mauritius).

*Echthromorpha vittata* (BRULLÉ 1846): SEYRIG 1932: 89 (tax.).

*Echthromorpha vittata* (BRULLÉ 1846): WILLIAMS 1958: 108 (biol., Mauritius).

*Echthromorpha agrestoria vittata* (BRULLÉ 1846): TOWNES 1958: 43 (tax.).

*Echthromorpha vittata* (BRULLÉ 1846): BENOIT 1964: 384 (Mauritius).

*Pimpla vittata* BRULLÉ 1846: TOWNES & TOWNES 1973: 36 (syn., type design.).

*Echthromorpha vittata* (BRULLÉ 1846): WILLIAMS 1974: 1 (cat. Mauritius).

*Echthromorpha vittata* (BRULLÉ 1846): WILLIAMS 1980: 1 (cat. Mauritius).

*Echthromorpha vittata* (BRULLÉ 1846): GANESHAN & WILLIAMS 2001: 1 (cat. Mauritius).

**Hosts:** Noctuidae: *Nagia megaruna* JOANNIS 1932, *Simplicia extinctalis* (ZELLER 1852) (= *S. inarcualis* GUENÉE 1854) – Pyalidae: *Omiodes indicata* (FABRICIUS 1775).

**Material examined:** Réunion: Cap Noir 1♂ 29.1.2002 leg. R. Parnadeau (MHN RUN) – Colimaçon, Conservatoire Botanique National des Mascarin 1♂ 19.5.2004 leg. M. Madl (NHMW) – without data 2♂♂ (MHN RUN) – Mauritius: 5♂♂ 1858 leg. I. Pfeiffer (NHMW) – without data 1♀ (BMNH); 1♀ (BMNH) – 1♂ 12.1934, 1♂ 1.1.1935, 1♂ 11.1949 (BMNH) – Black River Gorges National Park, Umgebung Le Petrin 1♂ 10.-12.5.2004 leg. M. Madl (NHMW) – Curepipe 1♀ 1.2.1954 leg. Hardy (MSIRI) – Floreal 1♀ May 1986 leg. J.R. Williams (MSIRI) – Henrietta, Umgebung Tamarin Falls 1♂ 16.10.2004 leg. M. Madl (NHMW) – Mondrain Reserve 7♂♂ 14.-15.5.2007 leg. M. Madl (NHMW) – Reduit 1♀ Dec. 1958, 3♂♂ 1♀ 2.1.1959, 1♀ 12.1.1959, 1♂ Jan. 1959, 1♂ 21.12.1959, 1♂ 30.1.1983, 1♂ 24.2.1984 leg. J.R. Williams (MSIRI) – Tamarin 1♀ 9.1.1990 leg. J.R. Williams (MSIRI) – Vacoas 2♂♂ 1♀ on elephant grass 19.11.1958 leg. A. Rajabalee (MSIRI).

**Distribution:** Réunion, Mauritius.

Endemic to the Mascarenes. The synonymy of *Echthromorpha macula* BRULLÉ is based on the sculpturation of the thorax and abdomen. Concerning colouration specimens from Réunion have more black markings than the Mauritian ones.

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### Zusammenfassung

Die Gattung *Echthromorpha* HOLMGREN 1868 ist in der Madagassischen Unterregion mit vier Arten vertreten. *Echthromorpha hyalina* (DE SAUSSURE 1890), *Echthromorpha rufa* CAMERON

1907 und *Echthromorpha spinator* (FABRICIUS 1798) werden als selbstständige Arten aufgefasst. Ein Bestimmungsschlüssel zu den Arten ist beigelegt.

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